2/2 018 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0115252

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ENERGY SPECTRA OF PRIME90 SR PRIME90 Y BETA SPECTRA CALCD. BY TAKING INTO ACCOUNT SELF ABSORPTION IN THE SOURCE HAVE ESSENTIALLY THE SAME SHAPE WHEN THE CALCN. ARE CARRIED OUT BY THE METHOD OF WEYMOUTH OR BY A MONTE CARLO METHOD. SOME DISCREPANCIES AT HIGH ENERGIES ARE ATTRIBUTED.TO THE APPROXNS. OF THE W. METHOD.

UNCLASSIFIED

USSR

MOROZOV, A. I., BELYAYEV, A. D., VITRIKOVSKIY, N. I., Institute of Semiconductors of the Academy of Sciences UkrSSR, Kiev

"Acoustoelectric Effect in $Cd_xZn_{1-x}S$ Single Crystals"

Leningrad, Fizika Tverdogo Tela, No. 4, Apr 71, pp 1079-1083

Abstract: $Cd_xZn_{1-x}S$ photoconducting single crystals grown by the synthesis method from the vapor phase with a ZnS content from 0 to 40 mol % and with a dark resistance of 10^5-10^{10} ohm·cm were investigated. Indium contacts were applied in a vacuum on the {0001} plane. The electroacoustic effect was studied in a pulse mode with longitudinal ultrasonic waves in the 20-40 MHz frequency range. Radial pulses of a length ~100 μsec and an amplitude of up to 200 v were used. A parity electroacoustic effect was observed in the samples, and the effect increased with an increase in the Zn content. The magnitude of the parity electroacoustic effect was studied as a function of the conductivity of the samples ($\sigma = 4 \cdot 10^{-10}$-$2 \cdot 10^{-5}$ $ohm^{-1} \cdot cm^{-1}$), the spectral composition of the illumination (λ = 0.4-0.7 μ), and the intensity of the ultrasonic wave. The strength of the electroacoustic effect reached 15 v and the value of the average field in the sample was 100 v/cm. It is noted that the effect of electron-phonon interaction has been discussed theoretically but that the mechanism for the rise of a parity acoustoelectric effect requires further explanation.

1/1

AM9047993

Belyayev,A.I.; Zhemchuzhina,Ye.A.; Firsanova,L.A.

The Metallurgy of Pure Metals and Elementary Semiconductors (Metallurgiya chistykh metallov i elementarnykh poluprovodnikov) Textbook. Moscow. Metallurgiya. 1969 503 pp (Kay)

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XVIII	Metallurgy of Pure Tin and Antimony
XIX	Obtainment of Pure Phosphorus and Arsenic
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1947 0389

AM9047993

Examined are the most important methods for the obtainment in a pure and purest form of the basic groups of metals. The book is designed as textbook for students specializing in production of pure metals and semiconductors

3/3 DH

1947 0390

1/2 028 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--CHEMICAL DISINFECTION OF SOME OBJECTS IN EPIDEMIC KERATOCONJUNCTIVITIS -U-

AUTHOR-(03)-ANDZHELOV, V.O., BELYAYEV, A.I., SKALA, L.E.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK OFTAL'MOLOGII, 1970, NR 1, PP 40-42

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--EYE DISEASE, ADENOVIRUS, INFECTIOUS DISEASE, EPIDEMIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1980/0821 STEP NO--UR/0357/70/000/001/0040/0042

CIRC ACCESSION NO--AP0049037
UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0049037

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTAL INVESTIGATIONS OF THE TYPE 8 ADENOVIRUS RESISTANCE SHOWED THAT IN A TITRE OF 10 PRIME9.5 TSD SUB50 THE VIRUS WAS FULLY INACTIVATED WITH 0.5 AND 1PERCENT PHENOL SOLUTIONS IN 50 AND 15 MINUTES RESPECTIVELY, WHILE A 5PERCENT PHENOL SOLUTION ELIMINATED ITS INFECTUOUSNESS IN THE FIRST MINUTE. IT IS A WELL KNOWN FACT THAT INFECTED MEDICAL INSTRUMENTS AND DEVICES PLAY AN IMPORTANT PART IN THE PROPAGATION OF THE CAUSATIVE AGENT OF EPIDEMIC KERATOCONJUNCTIVITIS IN MEDICAL INSTITUTIONS. IN THIS CONNECTION SPECIAL CONDITIONS INVOLVING THE USE OF CHLORAMINE, PHENOL, HYDROGEN PEROXIDE AND POLYVINYL,PYRROLIDONE,IODINE ALCOHOL SOLUTIONS HAVE BEEN WORKED OUT.

USSR UDC 669.71.472(088.8)

BELYAYEV, A. S., BICH, I. I., VIKHLYAYEV, A. A., NOSIKOV, G. M., and FEDULOV, A. I., Novokuznetsk Aluminum Plant and Mining Institute of Siberian Department of Academy of Sciences USSR

"Device for Disassembly of Lining of Aluminum Electrolyzers"

USSR Authors' Certificate No 290949, Cl. C 22d 3/02, C 22 d 3/12, filed 18 Nov 69, published 11 May 71 (from RZh-Metallurgiya, No 1, Jan 72, Abstract No 1G125P)

Translation of Abstract: This device for the disassembly of the lining of aluminum electrolyzers in accordance with author's certificate (RZh-Metallurgiya, 1967, Abstract No 7G131) is unique in that, in order to raise operating reliability, the rotating column consists of a pi-shaped pillar, to which a crane arm is hinged, and a rotating platform, on which are mounted the mechanism for rotating the column, the control panel, and hydraulic lifting jacks for hoisting the crane arm. The mechanism for rotating the column is made in the form of two hydraulic cylinders with two-way pistons, rigidly connected by racks meshing with an immobile pinion shaft. Two illustrations. 1/1

Instrumentation and Equipment

USSR UDC 669.71.472(088.8)

BELYAYEV, A. S., BEKTASOV, O. A., VOVK, P. A., KUROKHTIN, A. N., NEKHOROSHEV, V. S.

"Device for Measuring the Weld Packing Density of the Bottom of an Aluminum Electrolyzer and the Bottom Mass Temperature"

USSR Author's Certificate No 272567, Filed 23 Dec 68, Published 7 Sep 70 (from RZh-Metallurgy, No 4, Apr 71, Abstract No 4G161P)

Translation: The device includes a thermocouple and a galvanometer. For purposes of simultaneous measurement of the weld packing density and temperature of the anode mass, the device comprises a housing with sockets for arrangement of measuring instruments, a hollow connecting rod with a tip in which a thermocouple is installed, and a short-circuiting device needle. The [illegible] part of the connecting rod has an inclined plane for deflection of the density indicator needle, and the junction of the thermocouple is electrically connected to the short-circuiting device needle and the galvanometer. There are 3 illustrations.

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USSR

SKRYPNIK, G. I., BELYAYEV, A. V.

UDC 621.391.2

"Theory of Optimal Linear Filtration"

Moscow, Radiotekhnika i elektronika, Vol XVII, No 2, 1972, pp 321-331

Abstract: Multidimensional linear systems are defined which insure optimal performance of a given linear operation on the useful signal by the Zadeh or Kalman numbers. The Pontryagin principle of the maximum permitted reduction of the problem of synthesis of the given devices to one and the same system of ordinary differential equations with different boundary conditions. For a useful signal satisfying a given system of equations, a simple quadratic representation of the optimal systems was obtained in the form of matrices of weight functions and finite expressions were obtained for the dispersion matrices of the estimates. The primary difficulty when implementing the optimal systems in this form consists in inversion of the n × n dimensional matrices. This can be avoided by appropriate selection of the basic matrices. Along with the quadratic representation of the systems, under defined conditions their behavior is described by differential equations. The results obtained are a generalization (for the investigated class of trajectories of the target) of the results of Kalman and Bussy [R. E. Kalman, R. S. Bussy, Works of the American Society of Mechanical Engineers, Series D] to the case of an arbitrary

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USSR

SKRYPNIK, G. I., et al., Radiotekhnika i elektronika Vol XVII, No 2, 1972, pp 321-221

linear operator. The difference in the Zadeh and Kalman systems in this form is exhibited only in the initial positions.

USSR UDC 619.993.162-022.39-084.47

BELYAYEV, A. Ye., Institute of Medical Parasitology and Tropical Medicine imeni Ye. I. Martsinovskiy, Ministry of Health USSR

"Indications for Mass Vaccinations Against Zoonotic Cutaneous Leishmaniasis"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 5, 1971, pp 547-549

Abstract: A 1968 study of the incidence of cutaneous leishmaniasis in the Tedzhen region of Turkmenistan revealed that over 55 percent of the cases of the disease contracted that year were among infants under 1 year of age. Children over 5 are virtually immune. Health regulations permit vaccination against cutaneous leishmaniasis only from October 15 to February 1, i.e., when there is no longer any danger of vaccinates serving as an additional reservoir of the infection. Since children born after February 1, 1967, constituted 70 percent of those who contracted the disease in 1968, it was concluded that mass vaccination of the population is not justified as a prophylactic measure. Among other objections, the difficulty of scheduling such inoculations is cited, because infants are now regularly immunized against six diseases (tuberculosis, smallpox, measles, diphtheria, tetanus, poliomyelitis).

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USSR UDC: 538.311

BELYAYEV, B. G., Moscow Power Engineering Institute

"Calculation of an Electromagnetic Field in Accordance With Predetermined Sources in the Form of Currents"

Gor'kiy, IVUZ Radiofizika, Vol 15, No 6, 1972, pp 940-943

Abstract: An analysis is made of well known integral formulas which define an electromagnetic field with respect to given sources in the form of currents. Typical mistakes in interpretation of these formulas are noted, and the limitations of their field of applicability are pointed out. New formulas are also presented for solving a more extensive class of problems. The author thanks Ye. N. Vasil'yev and V. V. Bodrov for discussing the work and for constructive criticism.

1/1

USSR

UDC 620.98

BELYAYEV, B. V. and IOSIFOV, A. S.

"Some Problems of Reliability Associated with Multi-Element Chemical Current Sources"

Novocherkassk, Izvestiya vysshikh uchebnykh zavedeniy: Elektromekhanika, No 5, 1971, pp 574-577

Abstract: The authors present the methodology for the selection of and provide the basis for the empirical formula used to calculate the reliability of the multi-element circuit of chemical current sources. Based on the theorem of setting up an experiment, an expression is derived for the probability associated with the appearance of combinations of non-operating elements in multi-element circuits. Simpler formulas are given based on the above for practical calculations for existing non-operating intensity values of the elements λ. Original article: one table, eight formulas, two figures, and five bibliographic entries.
1/1

CSO: 1860-W

- END -

Oncology

USSR UDC 615.272.6:547.963.32].015:616-006-092.9

MATIYENKO, N. A., RONICHEVSKAYA, G. M., BELYAYEV, D. K., MARTYNOVA, R. P., and SALGANIK, R. I., Institute of Cytology and Genetics, Siberian Department, Academy of Sciences USSR, Novosibirsk

"Inhibitory Effect of Homologous Ribonucleic Acid on the Growth of Spontaneous Tumors in Mice of the High-Cancer A and C_3H Lines"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 1, 1971, pp 45-47

Abstract: Deproteinized RNA from mice of the low-cancer $C_{57}Bl$ line was injected subcutaneously into A and C_3H mice with palpable mammary tumors. The antitumor effect of the preparation was assessed from the differences in the weight of tumors in control and experimental mice (the tumors were systematically weighed in animals sacrificed 10, 20, 30, 40, 80, and 100 days after the injection) and in the survival time of animals. Whereas the weight of tumors in control mice increased rapidly for the first 1 to 1-1/2 months and remained stable thereafter, it was significantly lower (50 to 77%) in the experimental group at 1/2

USSR

MATIYENKO, N. A., et al. Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 1, 1971, pp 45-47

all stages, especially during the first 2 months. The survival time of experimental animals was also markedly longer than that of controls. Injection of the RNA had no toxic effects, judging by the fact that the body weight of experimental and control animals was virtually the same at the end of the experiment.

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USSR

UDC 536.7+66-971+541.124:546.34:546.264+661.882.2

BELYAYEV, E. K., PANASENKO, N. M., and TOMENKO, V. M.

"Thermodynamics and Mechanism of Formation of Titanates in a Mixture of Lithium Carbonate and Titanium Dioxide"

Moscow, Neorganicheskiye Materialy, Vol 7, No 4, Apr 71, pp 648-651.

Abstract: A thermodynamic basis is provided for the primacy of formation of metatitanate in mixtures of lithium carbonate and titanium dioxide. In the system Li_2O-TiO_2, the formation of three titanates was confirmed: lithium metatitanate, dititanate, and trititanate. In mixtures of Li_2CO_3 : TiO_2, metatitanate is first formed. The lithium dititanate is formed by interaction of titanium dioxide with lithium metatitanate. Lithium trititanate is formed by successive reactions of titanium dioxide with the metatitanate and dititanate.

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USSR

UDC 536.7+66-971+541.124:546.34:546.264+561.882.2

BELYAYEV, E. K., PANASENKO, N. M., and TOMENKO, V. M.

"Thermodynamics and Mechanism of Formation of Titanates in a Mixture of Lithium Carbonate and Titanium Dioxide"

Moscow, Neorganicheskiye Materialy, Vol 7, No 4, Apr 71, pp 648-651.

Abstract: A thermodynamic basis is provided for the primacy of formation of metatitanate in mixtures of lithium carbonate and titanium dioxide. In the system Li_2O-TiO_2, the formation of three titanates was confirmed: lithium metatitanate, dititanate, and trititanate. In mixtures of Li_2CO_3 ; TiO_2, metatitanate is first formed. The lithium dititanate is formed by interaction of titanium dioxide with lithium metatitanate. Lithium trititanate is formed by successive reactions of titanium dioxide with the metatitanate and dititanate.

1/1

1/2 022 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--FORMATION OF TETRASODIUM TRITITANATE IN MIXTURES OF SODIUM CARBONATE AND TITANIUM DIOXIDE -U-

AUTHOR-(03)-BELYAYEV, E.K., PANASENKO, N.M., LINNIK, YE.V.

COUNTRY OF INFO--USSR

B

SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 652-6

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL REACTION MECHANISM, X RAY ANALYSIS, SODIUM COMPOUND, CARBONATE, TITANATE, TITANIUM DIOXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1884 STEP NO--UR/0078/70/015/003/0652/0656

CIRC ACCESSION NO--AP0115703

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0115703

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INTERMEDIATE WHICH FORMS DURING A REACTION OF NA SUB2 CO SUB3 WITH TIO SUB2 AT A MOLE RATIO GREATER THAN 0.333 WAS STUDIED BY X RAY AND CHEM. ANALYSES. THE INTERMEDIATE IS 2NA SUB2 O.3TIO SUB2 (I) (BETA,TITANATE OR TETRA,NA TRI,TITANATE). THE MECHANISM OF THE REACTION OF NA SUB2 CO SUB3 WITH TIO SUB2 IN A 2:3 MOLE RATIO WAS STUDIED. THE REACTION GIVES I AND 4NA SUB2 O.5TIO SUB2 (II) AS PRODUCTS. I DISPROPORTIONATES TO II AND NA SUB2 O.3TIO SUB2.

UNCLASSIFIED

USSR

UDC 620.178.16:621.891:669.35'6

BELYAYEV, G. S.

"Increasing the Wear Resistance of Titanium-Bronze Friction Pairs by Plastic Deformation"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 1, Jan 74, pp 77-78

Abstract: The effect of surface hardening of titanium and bronze Br. AMTs9-2 by roller or ball working on antifriction properties and wear was studied. Samples were rotated on a lathe with roller and ball pressures applied to the titanium (the bronze metal being the insert (sandwiched) material). It was found that this method of surface working reduces the coefficient of friction of titanium by as much as 30-50%. Quality and hardness of the friction pair are increased from surface working which leads to the formation of residual compressive stresses. Four figures, one table.

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USSR UDC 669.7/.9.4(088.8)

BELYAYEV, G. S., MIKULINSKIY, A. S.

"Method of Refining Metals and Alloys"

USSR Author's Certificate No 313867, filed 10/09/68, published 10/11/71, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G204 P by G. Svodtseva).

Translation: In order to increase metal quality, vapors of alkali or alkali earth metal are blown through at $5 \cdot 10^{-2}$-$5 \cdot 10^{-2}$ l/sec per ton of metal. Blowing is conducted with a mixture of vapors of alkali or alkali earth metals with inert gases. The gas mixture should be at a high temperature, between 500-3,000° depending on the metal used.

Miscellaneous

4

USSR UDC 669.782.018.9(088.8)

GUSAROV, V. N., MIKULINSKIY, A. S., RYSS, M. A., GETMANCHUK, V. M., PIGASOV, S. Ye., BELYAYEV, G. S., BEDOV, I. S., and POMOVGAYEV, V. N.

"Method of Melting Calcium-Silicon".

USSR Author's Certificate No. 26515, Filed 22/04/67, Published 17/06/70, (Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract No.1 G164 P).

Translation: A method is suggested for producing Ca-Si in an electric arc furnace by reducing CaO with Si-containing material in the presence of CaF_2 with creation of a reducing atmosphere in the furnace by adding a C-containing material to the fused charge during the period of Ca reduction. The charge is fused in the presence of the C-containing material in order to increase the content of Ca in the melt, while the Si-containing reducer is introduced after melting.

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L/2 023 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--PHASE DIAGRAMS OF BINARY SYSTEMS FROM ALKALI METAL METAVANADATES
-U-
AUTHOR-(02)-BELYAYEV, I.N., GOLOVANOVA, T.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 892-3 (RUSS)

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--THERMAL EFFECT, SOLID SOLUTION, PHASE DIAGRAM, THERMAL ANALYSIS, CHEMICAL DECOMPOSITION, LOW TEMPERATURE EFFECT, POTASSIUM COMPOUND, RUBIDIUM COMPOUND, CESIUM COMPOUND, VANADATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0948 STEP NO--UR/0080/70/043/004/0892/0893

CIRC ACCESSION NO--AP0131533
UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0131533

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SYSTEMS KVO SUB2 RBVO SUB3, KVO SUB3 CSVO SUB3, AND RBVO SUB3 CSVO SUB3 WERE STUDIED BY THERMAL ANAL. THE M.PS. OF THE PARENT COMPDS. WERE 520, 560, AND 640DEGREES, RESP. RBVO SUB3 AND CSVO SUB3 HAD A POLYMORPHOUS TRANSFORMATION AT 518 AND 402DEGREES, RESP. THE 1ST OF THESE SYSTEMS FORMED 2 SERIES OF SOLID SOLNS., ONE OF WHICH WAS BASED ON THE HIGH TEMP. MODIFICATION OF RBVO SUB3 AND THE OTHER ON THE LOW TEMP. MODIFICATION. THE TRANSITION OF ONE INTO ANOTHER OCCURRED AT SIMILAR TO 500DEGREES. IN THE KVO SUB3 CSVO SUB3 SYSTEM A CONTINUOUS SERIES OF SOLID SOLNS. OF KVO SUB3 AND THE COMPD. 5KVO SUB3 4CSVO SUB3 WERE FORMED, HAVING A MIN. AT 450DEGREES AND 30 MOLE PERCENT CSVO SUB3. THE HIGH TEMP. MODIFICATIONS OF CSVO SUB3 AND 5KVO SUB3 4CSVO SUB3 FORMED LIMITED SOLID SOLN.S WITHA EUTECTIC AT 474DEGREES AND 47.5 MOLE PERCENT CSVO SUB3. THESE SOLID SOLNS. UPON LOWERING THE TEMP. DECOMPD. BY MEANS OF A EUTECTOID REACTION WITH A EUTECTOID POINT AT 392DEGREES AND 90 MOLE PERCENT CSVO SUB3. AT SMALLER THAN 350DEGREES THE COMPD. KVO SUB3 2CSVO SUB3 WAS FORMED. THE SYSTEM RBVO SUB3 CSVO SUB3 FORMED 2 SERIES OF CONTINUOUS SOLID SOLNS. WITH PRACTICALLY STRAIGHT TRANSITION LINES. FACILITY: ROSTOV.-NA-DONU GOS. UNIV., ROSTOV-ON-DON, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--CESIUM CHLORIDE-BARIUM CHLORIDE, RUBIDIUM,CESIUM, CHLORIDE-MERCURY II CHLORIDE, POTASSIUM, RUBIDIUM, THALLIUM, CHLORIDE-NICKEL II CHLORIDE,

AUTHOR-(03)-BELYAYEV, I.N., LESNYKH, O.S., EYKENBAUM, I.G.

B

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 846-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--GRAPHIC TECHNIQUE, PHASE DIAGRAM, PHYSICAL CHEMISTRY PROPERTY, THERMAL ANALYSIS, CESIUM CHLORIDE, BARIUM CHLORIDE, MERCURY COMPOUND, POTASSIUM CHLORIDE, NICKEL CHLORIDE, COBALT CHLORIDE, THALLIUM CHLORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1714 STEP NO--UR/0078/70/015/003/0846/0848

CIRC ACCESSION NO--AP0115643

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0115543

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE SYSTEMS WERE INVESTIGATED BY VISUAL POLYTHERMAL AND THERMOGRAPHIC METHODS AND BY PHYS. CHEM. ANAL. PHASE DIAGRAMS OF THE SYSTEMS ARE CONSTRUCTED AND EXPTL. DATA IS TABULATED. WITH THE EXCEPTION OF THE CSCL-BACL SUB2 SYSTEM, THE REMAINING SYSTEMS FORM ABCL SUB3 COMPDS. RBHGCL SUB3 AND CSHGCL SUB3 HAVE PEROVSKITE STRUCTURE AND KNICL SUB3, RBNICL SUB3, AND TLNICL SUB3 HAVE CSNICL SUB3-TYPE STRUCTURE. FACILITY: ROSTOV.-NA-DONU GOS. UNIV., ROSTOV-CN-DON, USSR.

UNCLASSIFIED

Acc. Nr: AP0047633 Abstracting Service: CHEMICAL ABST. 5/70 Ref. Code: UR0080

B

104512w Solubility in ammonium nitrate-ammonium monohydrogen phosphate-water and ammonium monohydrogen phosphate-ammonium carbonate-water systems at 10°. Belyaev, L. N.; Sigida, N. P.; Stepanenko, T. D (USSR). *Zh. Prikl. Khim.* (*Leningrad*) 1970, 43(1), 178–81 (Russ). Soly. diagrams of NH_4NO_3–$(NH_4)_2HPO_4$–H_2O and $(NH_4)_2HPO_4$–$(NH_4)_2CO_3$–H_2O systems at 10° are constructed. Both systems are of eutonic type, having eutonic point shifted toward the region of the most-sol. components, NH_4NO_3 and $(NH_4)_2HPO_4$, resp. HMIR

1/1

REEL/FRAME
19791205

18 pt.

1/2 009 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--PHYSICOCHEMICAL STUDY OF SRTIO (C SUB2 O SUB4) SUB2 -KCL-H SUB2 O AND SRTIO (C SUB2 O SUB4) SUB2 -KNO SUB3 -H SUB2 O QUASITERNARY SYSTEMS

AUTHOR-(02)-BELYAYEV, I.N., BONDAREVA, S.V.

B

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(1), 8-11

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--PHYSICAL CHEMISTRY PROPERTY, EUTECTIC MIXTURE, CRYSTALLIZATION, POTASSIUM CHLORIDE, POTASSIUM NITRATE, OXALATE, STRONTIUM COMPOUND, TITANATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/1918 STEP NO--UR/0153/70/013/001/0008/0011

CIRC ACCESSION NO--AT0114358

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AT0114358

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AT 20DEGREES, THESE SYSTEMS ARE OF THE SIMPLE EUTECTIC TYPE, WITH REGIONS CORRESPONDING, RESP., TO THE CRYSTN. OF SRTI-O (C SUB2 O SUB4) SUB2 .5.5H SUB2 G AND TO KCL OR KNO SUB3. TWO CRYSTN. FORMS ARE FOUND IN EQUIL. WITH LIQ. PHASE COMPNS. OF 0.05 WT.PERCENT SRTIO-(C SUB2 O SUB4) SUB2 -24.95 WT.PERCENT KCL AND WITH 0.37 WT.PERCENT SRTIO(C SUB2 O SUB4) SUB2-23.93 WT.PERCENT KNO SUB3, WHEREAS ONLY A SINGLE SOLID PHASE IS FOUND IN REGIONS REMOVED FROM THESE COMPNS. THE DS., VISCOSITIES, AND ELEC. COND. ARE GIVEN FOR THE EQUIL. LIQ. PHASE. ONLY D. SHOWS A WEAK MAX. CORRESPONDING TO THE EUTECTIC COMPN. FACILITY: ROSTOV. GOS. UNIV., ROSTOV, USSR.

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0135069
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TOTAL VAPOR PRESSURE ABOVE THE BINARY SYSTEM COBR-MBR (M EQUALS LI, NA, K, RB, CS) WAS CALCD. FROM M.P. DATA. WITH AN EXCEPTION OF THE LIBR SYSTEM, THE INVESTIGATED SYSTEMS SHOW A POS. DEVIATION OF THE VAPOR PRESSURE ISOTHERMS (700, 750, AND 800DEGREES), DUE TO COMPLEX FORMATION. THE DEVIATION INCREASED IN THE ABOVE ORDER OF M FROM NA TO CS. FACILITY: ROSTOV-GN-DONU GOS. UNIV., ROSTOV-ON-DON, USSR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--CDI SUB2 -NI SYSTEM -U-

AUTHOR-(02)-BELYAYEV, I.N., KESAREV, V.V.

B

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(5), 1434-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHASE EQUILIBRIUM, IODIDE, CADMIUM COMPOUND, ALKALI METAL COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1399 STEP NO--UR/0078/70/015/005/1434/1435

CIRC ACCESSION NO--AP0135073

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0135073

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ALL INVESTIGATED CDI SUB2 -MI SYSTEMS (M EQUALS LI, NA, K, RB, CS) SHOW A NEG. DEVIATION FROM RAOULT'S LAW INCREASING FROM M EQUALS NA TO M EQUALS CS. THE DATA ARE TABULATED. FACILITY: ROSTOV.-NA-DONU GOS. UNIV., ROSTOV-ON-DON, USSR.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--PHYSICOCHEMICAL STUDY OF TERNARY AQUEOUS SYSTEMS WITH THE PARTICIPATION OF POTASSIUM TITANYLOXALATE -U-

AUTHOR-(02)-BELYAYEV, I.N., BONDAREVA, S.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(5), 1359-61

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AQUEOUS SOLUTION, TERNARY FLUID SYSTEM, CHEMICAL PRECIPITATION, SOLUBILITY, FLUID VISCOSITY, ELECTRIC CONDUCTIVITY MEASUREMENT, TITANATE, OXALATE, NITRATE, ALKALI METAL HALIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1415 STEP NO--UR/0078/70/015/005/1359/1361

CIRC ACCESSION NO--AP0135089

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0135089

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SOLY., VISCOSITY, D., AND SP. ELEC. COND. WAS DETD. IN K SUB2 TIO(C SUB2 O SUB4) SUB2 -XX-H SUB2 O SYSTEMS AT 200EGREES, WHERE X EQUALS CL, BR, I, OR NO SUB3. THESE ARE THE SIMPLE EUTONIC SYSTEMS, HAVING SALTING OUT EFFECT OF TIO(C SUB2 O SUB4) SUB2 PRIME2NEGATIVE INCREASING WITH THE ANION IN THE ORDER NO SUB3 LESS THAN CL LESS THAN BR LESS THAN I.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--PHYSICOCHEMICAL STUDY OF AMMONIUM CARBONATE AMMONIUM HALIDE WATER SYSTEMS -U-

AUTHOR-(03)-BELYAYEV, I.N., GRIGORYEVA, YE.A., SPUSKANYUK, ZH.F.

B

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 796-800

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AMMONIUM HALIDE, AMMONIUM COMPOUND, CARBONATE, AMMONIUM CHLORIDE, WATER, SOLUBILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0451 STEP NO--UR/0078/70/015/003/0796/0800

CIRC ACCESSION NO--AP0126203

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126203

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOLY., ELEC. COND., D., VISCOSITY: AND N OF (NH SUB4) SUB2 CO SUB3-NH SUB4 X-H SUB2 9 SYSTEM (WHERE X EQUALS CL, BR, OR I) WERE DETD. AT 15DEGREES. THE NH SUB4 CL AND NH SUB4 BR SYSTEMS ARE SIMPLE EUTONIC SYSTEMS AND THE NH SUB4 I SYSTEM FORMS THE UNSTABLE (NH SUB4) SUB2 CO SUB3.NH SUB4 I.2H SUB2 O COMPD.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--PHASE DIAGRAMS OF LITHIUM ,SODIUM, POTASSIUM, RUBIDIUM, CESIUM, BROMIDE TIN,II,BROMIDE SYSTEMS -U-

AUTHOR-(02)-BELYEYEV, I.N., SHURGINOV, YE.A.

B

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 883-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHASE DIAGRAM, LITHIUM COMPOUND, RUBIDIUM COMPOUND, CESIUM COMPOUND, SODIUM COMPOUND, POTASSIUM COMPOUND, TIN COMPOUND, BROMIDE, THERMOGRAPHIC ANALYSIS, EUTECTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0449 STEP NO--UR/0078/70/015/003/0883/0885

CIRC ACCESSION NO--AP0126201

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0126201

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHASE DIAGRAMS OF MBR,SNBR SUB2 (M EQUALS K, RB, AND CS) ARE CONSTRUCTED USING VISUAL POLYTHERMIC AND THERMOGRAPHIC METHODS. EACH SYSTEM HAS 2 EUTECTICS, ONE DYSTECTIC, AND ONE TRANSITION POINT. COMPN. OF SOLID PHASES OF THE SYSTEMS IF TABULATED.

UNCLASSIFIED

1/3 027 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--SOLID SOLUTIONS IN THE PB SUB2 CDWO SUB6NEGATIVE "PB SUB2 DCMOO SUB6" SYSTEM -U-
AUTHOR-(03)-BELYAYEV, I.N., MEDVEDEVA, L.I., BOGATIN, A.S.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 597-9

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--SOLID SOLUTION, LEAD COMPOUND, CADMIUM COMPOUND, MOLYBDENUM, CURIE POINT, SINTERED ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0829 STEP NO--UR/0363/70/006/003/0597/0598

CIRC ACCESSION NO--AP0118006
UNCLASSIFIED

2/3 027 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118006

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PBO-CDMOO SUB4 AND PB SUB2 CDWO SUB6-PBCDMOO SUB6 SYSTEMS WERE STUDIED. A COMPARISON OF INTERPLANAR SPACINGS OF SAMPLES OF THE PBO-CDMOO SUB4 SYSTEM AS OBTAINED FROM POWDER DIFFRACTION PATTERNS SHOWED THAT PB SUB2 CDMOO SUB6 DOES NOT FORM IN THAT SYSTEM. ALL COMPNS. HELD TO 400DEGREES WERE MIXTS. OF THE STARTING COMPONENTS. POWDER PATTERNS OF THE SAMPLE OF COMPN. OF 10PERCENT CDMOO SUB4 SHOWED THE PRESENCE OF A PHASE DIFFERENT FROM THE STARTING COMPONENTS, NAMELY THE PB SUB2-MOO SUB5 PHASE. THE SUBSTITUTION OF W BY MO IN THE COMPD. PB SUB2 CDWO SUB6 WAS ACCOMPLISHED BY SINTERING SAMPLES OF COMPN. PB SUB2 CD(W SUB1-X MO SUBX) O SUB6 (X EQUALS 0.05-0.95). THE SAMPLES WERE SINGLE PHASE WITHIN THE REGION TO X EQUALS 0.5. AT HIGHER X, PBO AND PBMOO SUB4 ALSO FORMED IN ADDN. TO THE LIMITED SOLID SOLNS. PB SUB2 CD (W SUB1-X MO SUBX) O SUB6. THE SOLID SOLNS. ARE STABLE TO 900DEGREES. IN VIEW OF THE CLOSENESS BETWEEN THE IONIC RADII FOR W PRIME6 POSITIVE AND MO PRIME6 POSITIVE, THE LATTICE PARAMETERS OF THE SOLID SOLNS. DO NOT DIFFER APPRECIABLY FROM THE PARAMETERS FOR PB SUB2 CDWO SUB6 AND ARE EQUAL TO A EQUALS C EQUALS 4.156, B EQUALS 4.074 ANGSTROM, AND BETA EQUALS 91DEGREESO PRIME. THE EXISTENCE OF SOILD SOLNS. IN THE 2PBO-CD(W SUB1-X MO SUBX)O SUB4 SYSTEM HAS BEEN CONFIRMED ALSO BY DTA DATA AS WELL AS BY THE MEASUREMENTS OF THE TEMP. DEPENDENCE OF PERMITTIVITY. THE PHASE TRANSFORMATION AT 402DEGREES WAS DETD. ON THE HEATING CURVE OF THE PURE PB SUB2 CDWO SUB6 SAMPLE.

UNCLASSIFIED

3/3 027 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0118006
ABSTRACT/EXTRACT--THE CURIE POINT DECREASES WITH INCREASING MO CONTENT IN THE SOLID SOLNS.; FOR PB SUB2 CDWO SUB6 IT IS 400DEGREES, AND FOR PB SUB2 CDIW SUB0.9 MO SUB0.1)O SUB6 IS IT 392DEGREES. FACILITY: ROSTOV. GOS. UNIV., ROSTOV, USSR.

UNCLASSIFIED

USSR

UDC 669.71.472(008.8)

LOZOVOY, YU. D., and BELYAYEV, L. A.

"Method of Firing the Bottom of an Aluminum Electrolytic Reduction Cell"

USSR Author's Certificate No 259399, filed 23 Oct 67, published 15 May 70 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11 G111 P)

Translation: A method is proposed for firing the bottom of an aluminum electrolytic reduction cell during dc heating on metal using shunt-rheostats. To prolong the life of the electrolytic reduction cells, the cells are switched on for firing after teeming of the molten Al onto a layer of solid Al which was previously laid out on the bottom surface.

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Acc. Nr: AP0048480 Abstracting Service: CHEMICAL ABST. 5/70 Ref. Code: UR0070

B

105253z Magnetic properties of rare-earth stannates, $R_2Sn_2O_7$. Mitina, L. P.; Belyaev, L. M.; Dem'yanets, L. N.; Dmitrieva, T. V.; Lyubutin, I. S. (Inst. Kristallogr., Moscow, USSR). *Kristallografiya* 1970, 15(1), 183–6 (Russ). The temp. dependence of the magnetic susceptibility (χ) was measured for compds. of the $R_2Sn_2O_7$ type, where R = La, Pr, Nd, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, and Y in magnetic fields of 7 and 10 kOe at 100 – 600°K by means of a balance with electromagnetic compensation. Curves are shown. The values of molar susceptibility at 293°K, Curie const., paramagnetic Curie temp., and effective magnetic moment calcd. from the values measured are tabulated. The deviations from linearity of the $1/\chi(T)$ dependence were discussed. The effect of cryst. fields is mentioned as a possible cause of the deviation from the Curie law at lower temps.

V. Burjan

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REEL/FRAME 19800188

18 A

1/2 025 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--MAGNETIC AND ELECTRIC HYPERFINE INTERACTIONS OF FE PRIME57 NUCLEI IN VANADIUM AND SILICON GARNETS -U-

AUTHOR--LYUBUTIN, I.S., BELYAYEV, L.M., VISHNYAKOV, YU.S., DMITRIYEVA, T.V., DODOKIN, A.P.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZAKI, 1970, VOL 58, NR 4, PP 1204-1210

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS

TOPIC TAGS--VANADIUM, SILICON, GARNET, MOSSBAUER EFFECT, IRON COMPOUND, ELECTRIC FIELD, MAGNETIC FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0989 STEP NO--UR/0056/70/058/004/1204/1210

CIRC ACCESSION NO--AP0105853

UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0105853

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MOSSBOUER EFFECTS FOR FE PRIME 57 NUCLEI IN THE SUBSTITUTED GARNET SYSTEMS Y SUB3 MINUS X CA SUBX FE SUB5 MINUS X SI SUBX O SUB12 WITH O LESS THAN OR EQUAL TO X LESS THAN OR EQUAL TO 3.0 AND Y SUB3 MINUS 2X CA SUB2X FE SUB5 MINUS X V SUBX O SUB12 WITH O LESS THAN OR EQUAL TO X LESS THAN OR EQUAL TO 1.5 IS INVESTIGATED AT TEMPERATURES BETWEEN 78 AND 600DEGREESK. IT IS FOUND THAT THE EFFECTIVE MAGNETIC FIELDS H SUBEFF IN THE ALPHA-SUBLATTICE OF THE VANADIUM GARNETS IS LOWER THAN THE CORRESPONDING FIELDS IN SILICON GARNETS FOR EQUAL REDUCED TEMPERATURES T-THETA. SUBSTITUTION LEADS TO A STRONG GROWTH OF THE ELECTRIC FIELD GRADIENT IN THE ALPHA-SUBLATTICES OF VANADIUM AS WELL AS SILICON GARNETS, THE GROWTH BEING MORE PRONOUNCED IN THE VANADIUM GARNETS. IT IS ALSO FOUND THAT WITH GROWTH OF X THE MAGNITUDE OF THE ISOMER SHIFT IN THE ALPHA-SUBLATTICE DECREASES. THE EFFECTS CAN BE EXPLAINED BY A COVALENCE ADMIXTURE TO THE IONIC CHEMICAL BOND BETWEEN IRON AND OXYGEN IN THE ALPHA-SITES OF THE VANADIUM GARNETS.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--SYNTHESIS GROWTH, AND STUDY OF THE OPTICAL CHARACTERISTICS OF CSCU SUB2 CL SUB3 CRYSTALS -U-

AUTHOR-(05)-BELYAYEV, L.M., SOBOLEVA, L.V., GILVARG, A.B., DMITRIYEVA, F.I., OGADZHANOVA, V.V.

COUNTRY OF INFO--USSR

B

SOURCE--KRISTALLOGRAFIYA 1970, 15(1), 205-7

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CRYSTAL OPTIC PROPERTY, CRYSTAL GROWING, THERMAL ANALYSIS, COPPER CHLORIDE, CESIUM COMPOUND, CRYSTAL LATTICE STRUCTURE, LIGHT TRANSMISSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1980/0158 STEP NO--UR/0070/70/015/001/0205/0207

CIRC ACCESSION NO--AP0043450

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--09OCT70
CIRC ACCESSION NO--AP0048450
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CSCU SUB2 CL SUB3 WERE PREPD. FROM A STOICHIOMETRIC MIXT. OF CUCL SUB2.2H SUB2 O, METALLIC CU, AND CSCL IN 20PERCENT EXCESS. CSCU SUB2 CL SUB3 FORMS COLORLESS NEEDLES, BECOMING YELLOW AND THEN GREEN IN A MOIST ATM. DTA OF THE STARTING PRODUCT AND PREPD. SINGLE CRYSTALS SHOWED IDENTICAL RESULTS: AN ENDOTHERMIC EFFECT AT 280DEGREES CORRESPONDING TO THE M.P. OF CSCU SUB2 CL SUB3. CSCU SUB2 CL SUB3 BELONGS TO THE RHOMBODIPYRAMIDAL CLASS (3L SUB2 3PC, MMM) WITH UNIT CELL PARAMETERS A 9.49, B 11.88, AND C 5.61 ANGSTROM; THE BRAGG ANGLES OF THE 3 PRINCIPAL PLANES (100), (010), (001) ARE THETA (SUB100) EQUALS 9DEGREES 21 PRIME, THETA (SUB010) EQUALS 7DEGREES 27 PRIME, THETA (SUB001) EQUALS 15DEGREES 57 PRIME. THE PRINCIPAL NS, N GAMMA, N BETA, AND N ALPHA, ARE GIVEN FOR 8 MONOCHROMATIC WAVELENGTHS IN THE RANGE 408-691 MN. HIGH TRANSMITTANCE OF CSCU SUB2 CL SUB3 IN THE VISIBLE AND IR RANGE WAS FOUND (TO 20 MU FOR THE THICKNESS 4.5 MM).
FACILITY: INST. KRISTALLOGR., MOSCOW, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--CATIONIC DISTRIBUTION IN A SYSTEM OF CA SUB3 IN SUB2 SN SUBX NEGATIVE GE SUB3 NEGATIVE X O SUB12 GARNETS BASED ON GAMMA RESONANCE

AUTHOR-(03)-BELYAYEV, L.M., LYUBUTIN, I.S., MILL, B.V.

B

COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, 15(1), 174-174

DATE PUBLISHED----------70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--MOSSBAUER SPECTRUM, GARNET, GERMANIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/0906 STEP NO--UR/0070/70/015/001/0174/0175

CIRC ACCESSION NO--AP0116416

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0116416
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FORMATION OF GARNETS IN THE SYSTEMS CA SUB3 ZR SUB2 GE SUB1 NEGATIVE X SN SUBX GA SUB2 O SUB12, X EQUALS 0.5, 1.0; SR SUB3 YB SUB2 GE SUB3 NEGATIVE X SN SUBX O SUB12, CA SUB3 YB SUB2 GE SUB3 NEGATIVE X SN SUBX O SUB12, SR SUB3 IN SUB2 GE SUB3 NEGATIVE XNEGATIVE SN SUBX O SUB12, X EQUALS 0.5; AND CA SUB3 IN SUB2 GE SUB3 NEGATIVE X SN SUBX O SUB12, X EQUALS 0.0, 0.25. 0.5, 0.75 WAS STUDIED IN ORDER TO OBTAIN GARNETS CONTG. SN PRIME4POSITIVE IN D POSITIONS (TETRAHEDRAL) EXCLUSIVELY. SINGLE.PHASE SAMPLES WERE OBSD. IN THE LAST CASE ONLY FOR X SUBMAX IS APPROXIMATELY EQUAL TO 0.6. THE IMPOSSIBILITY OF CNLY IN PRIME3POSITIVE IONS OCCUPYING THE A POSITIONS (OCTAHEDRAL) WAS CONCLUDED FROM THE MOESSBAUER SPECTRA. THE RELATION OF SN PRIME4POSITIVE (D)-SN PRIME4POSITIVE (A) IS SIMILAR TO OF EQUAL TO 0.25 FOR X EQUALS 0.25, AND 0.42 FOR X EQUALS 0.5. IN PRIME3POSITIVE IONS OCCUPY A MAX. OF 15PERCENT OF THE D POSITIONS IN THE GARNET STRUCTURE AND THIS FACT ALSO DETS. X SUBMAX FOR THE SYSTEMS.
FACILITY: INST. KRISTALLOGR., MOSCOW, USSR.

UNCLASSIFIED

1/2 054 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--EFFECT OF HARDENING AND SOFTENING IMPURITIES AND IRRADIATION ON THE THERMOLUMINESCENCE AND THERMOEMISSION OF EXOELECTRONS WITH LITHIUM

AUTHOR-(04)-BELYAYEV, L.M., KNAB, G.G., UROSOVSKAYA, A.A., DOBRZHANSKIY, G.F.

COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, 15(2), 317-21

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--THERMOLUMINESCENCE, CRYSTAL IMPURITY, LITAIUM FLUORIDE, PHOTON EMISSION, HARDNESS, LUMINESCENCE SPECTRUM, RADIATION EFFECT, URANIUM, MAGNESIUM INDIUM, MERCURY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1476 STEP NO--UR/0070/70/015/002/0317/0321

CIRC ACCESSION NO--AP0118465

UNCLASSIFIED

2/2 054 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0118465

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF DIFFERENT TYPES OF IMPURITIES (U, MG, WHICH HARDEN AND IN, AND HG WHICH SOFTEN THE CRYSTAL) AND OF IRRADN. WAS STUDIED ON THE LUMINESCENCE, EMISSION, AND MECH. PROPERTIES OF LIF. THE PROPERTIES WERE COMPARED FOR PURE AND IMPURE CRYSTALS FOR DIFFERENT IRRADN. TIMES. THE HARDENING IMPURITIES INCREASE THE INTENSITY OF THE LUMINESCENCE AND DECREASE THE EMISSION INTENSITY. IN THE THERMOLUMINESCENCE SPECTRA FOR LIF,MG, U PRODUCES MAX. WHICH CORRESPOND TO THE V BAND ABSORPTION. HG FACILITATES THE ACTIVATION DURING IRRADN. FOR LONG EXPOSURES TO X RAYS OF SOME NEW PROCESSES WHICH SUPPRESS THE ELECTRON EMISSION AND RECOMBINATION. THE SOFTENED CRYSTALS HAVE AN INTENSE EXOEMISSION AND STRONG THERMOLUMINESCENCE. X RADIATION REACTS WITH THE IMPURITIES, BRINGING ABOUT COMPLEX CHANGES IN THE DEFECT STRUCUTRE. FACILITY: INST. KRISTALLOGR., MOSCOW, USSR.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--TEMPERATURE DEPENDENCE OF THE MOESSBAUER EFFECT FOR OCTAHEDRAL IRON ATOMS IN GARNETS -U-

AUTHOR-(03)-LYUBUTIN, I.S., DODOKIN, A.P., BELYAYEV, L.M.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1399-401

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, PHYSICS, MATERIALS

TOPIC TAGS--MOSSBAUER EFFECT, IRON, GARNET, DEBYE TEMPERATURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0957 STEP NO--UR/0181/70/012/005/1399/1401

CIRC ACCESSION NO--AP0133043

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0133043
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AT 77-800DEGREESK, THE MOESSBAUER EFFECT WAS INVESTIGATED FOR OCTAHEDRAL FE ATOMS IN THE GARNETS CA SUB3 FE SUB2 SI SUB3 O SUB12 AND CA SUB3 FE SUB2 GE SUB3 O SUB12. THE TEMP. DEPENDENCE OF THE ISOMER SHIFT IS RELATED MAINLY TO THE TEMP. DEPENDENCE OF THE RELATIVISTIC SHIFT. FROM MEASUREMENTS OF THE PROBABILITY OF THE RESONANCE ABSORPTION, THE "MOESSBAUER" DEBYE TEMP. WAS EVALUATED, WHICH IS LOWER THAN THE CALORIMETRIC DEBYE TEMP. FACILITY: INST. KRISTALLOGR., MOSCOW, USSR.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--EFFECT OF COMPOSITION ON THE GROWTH, DIELECTRIC AND PHOTOELECTRIC PROPERTIES OF SBSI CRYSTALS -U-

AUTHOR-(03)-BELYAYEV, L.M., LYAKHOVITSKAYA, V.A., SILVESTROVA, I.M.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 429-33

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--CRYSTAL GROWTH, PHOTOELECTRIC PROPERTY, ANTIMONY COMPOUND, SULFUR COMPOUND, IODIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0831 STEP NO--UR/0363/70/006/003/0429/0433

CIRC ACCESSION NO--AP0118007

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0118007
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE GROWTH FEATURES OF SBSI CRYSTALS IN THE PRESENCE OF SBI SUB3, I SUB2, SB SUB2 S SUB3, AND S SUB2 IMPURITIES WERE STUDIED IN ORDER TO DET. THEIR EFFECT ON THE DIELEC. AND PHOTOELEC. PROPERTIES OF THESE CRYSTALS. THE SBSI CRYSTALS WERE GROWN FROM THE GAS PHASE AND THE MELT. THE FUNDAMENTAL PROCESS COMPLICATING THE CRYSTAL GROWTH IS THE DISSOCN. OF SBSI. THE TEMP. DEPENDENCE OF DIELEC. CONST. AND THE SPECTRAL DISTRIBUTION OF PHOTOSENSITIVITY OF THE CRYSTALS WITH THE NAMED IMPURITIES PRESENT WERE STUDIED. THE ADDN. OF SB TO SBSI CRYSTALS RESULTS IN A SIGNIFICANT INCREASE IN THE COND. OF 10 PRIME NEGAVITE6 OHM PRIME NEGATIVE1-CM PRIME NEGATIVE1 AND A DECREASE IN THE PHOTOSENSITIVITY OF THE CRYSTALS. THE ADDN. OF THE NAMED IMPURITIES INTO SBSI CRYSTALS IN CONCNS. OF LESS THAN 1 MOLE PERCENT DOES NOT CHANGE SIGNIFICANTLY THE ELEC. PROPERTIES OF THE CRYSTALS.
FACILITY: INST. KRISTALLOGR., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 51:330.115

BELYAYEV, L. S.

"Certain Approaches to the Solution of Optimization Problems of High Dimensionality Under Conditions of Uncertainty"

Metody Upr. Bol'shimi Sistemi. T. 2, [Methods of Control of Large Systems, Vol. 2--Collection of Works], Irkutsk, 1970, pp 6-14, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V584).

No abstract.

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USSR UDC 621.311.016.31.003.1

BELYAYEV, L.S. and OVSEPYAN, R.S., Irkutsk

"Investigation of Methods for Controlling Long-Term Hydroelectric Station Operation"

Moscow, Izvestiya Akademii Nauk SSSR -- Energetika i Transport, No 1, January-February 1971, pp 16-23

Abstract: The purpose of the research described in this paper is to choose the best method of controlling long-term operation of electrical power systems using hydroelectric stations. To make this choice, the authors apply a method they developed, in collaboration with N.P. Kharchenko in an earlier paper (Vybor sposoba upravleniya protsessom raboty elektroenergeticheskikh sistem s gidroelektrostantsiyami -- Choice of Method for Controlling Operation Procedures in Electric Power Systems with Hydroelectric Stations) in the No 5, 1968 issue of the same journal named above. They also give a general description of investigations into various control methods for the Irkutsk, Bratsk, Novosibirsk, Mingechaursk, and Vilyuysk hydroelectric stations, in which the calculations were made according to programs based on

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USSR

BELYAYEV, L.S., et al., Izvestiya Akademii Nauk SSSR -- Energetika i Transport, Moscow, No 1, January-February 1971, pp 16-23

stochastic dynamic programming methods. The authors conclude that, as a general rule, it is best to change the control method in the course of a year. The article offers three tables: the first gives the characteristics of computation variants for each of the five stations named above; the second indicates the results of a comparison of control methods for each of the stations; and the third shows the best methods for control of the Novosibirsk hydroelectric stations.

USSR

BELYAYEV, M. F., RAMM, D. V., UDALAYA, V. N.

"Errors of Vibration-Frequency Pressure Gages Caused by Elasticity Imperfections of the Material"

Vibratsionno-chastotn. preobrazovateli. Ch. 1 (Vibration-Frequency Converters. Part 1), Moscow, Energiya Press, 1970, pp 72-88 (from RZh-Mekhanika, No 11, Nov 70, Abstract No 11V1395)

Translation: This article contains the results of analyzing an elastic system of vibration-frequency pressure gages from the point of view of errors from elastic imperfections of the gage material. It is demonstrated that a characteristic feature of the elastic system of the investigated sensors is the possibility of decreasing the given type of error by compensating for the inelastic properties of the elastic and sensitive elements of the sensors. The elastic lag of the sensors is analyzed, and the results of measuring it for sensors of various types and sizes are presented. The relation of hysteresis and sensitivity of the characteristic to the procedure for calibrating and checking the sensor is demonstrated. The bibliography has 7 entries.

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Metrology

USSR

UDC: 531.787.083.8.089.6

BELYAYEV, M. F., RAMM, D. V., UDALAYA, V. N.

"Errors of Vibration-Frequency Pressure Pickups Caused by Imperfections in the Elasticity of the Material"

V sb. Vibratsionno-chastotn. preobrazovateli. Ch. 1 (Vibration-Frequency Transducers--collection of works. Part 1), Moscow, "Energiya", 1970, pp 72-88 (from RZh-Metrologiya i Izmeritel'naya Tekhnika, No 9, Sep 70, Abstract No 9.32.696)

Translation: The authors present the results of an analysis of the elastic system of vibration-frequency pressure pickups from the standpoint of errors due to imperfections in the elasticity of the pickup material. It is shown that a peculiarity of the elastic system of these pickups is the possibility of reducing errors of this class by compensating for the inelastic properties of the elastic and sensing elements of the pickups. An equation is given for the elastic lag of the pickups, and data are given from measurements of this lag in pickups of various standard dimensions. It is shown how the hysteresis and sensitivity of the characteristics are related to the procedure for graduating and checking the pickup. Nine illustrations, two tables, bibliography of seven titles.

1/1

BELYAEV M. E.

AA9027581

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 12/

216326 DYNAMOMETRIC PICKUP comprising an elastic element (1) and a rectangular vibrating link (2) rigidly connected with it at right angle to the direction of the measured force (P). The elastic element has two inertia masses (3) rigidly connected with the link, and four rigid rods (4) connected by elastic hinges in pairs with themselves and with the inertia masses, so that they form a square or a diamond, whose one diagonal coincidences with the measured force line of action.

When the generator is switched on, the shock produced by the current in the exciter (5) induces the vibrating link to oscillate at its natural frequency. The link mechanical oscillations are converted by a receiver (6) into electric oscillations which after amplification are applied to the exciter and converted into an electromagnetic force in phase with the initial shock, thus starting the generator.

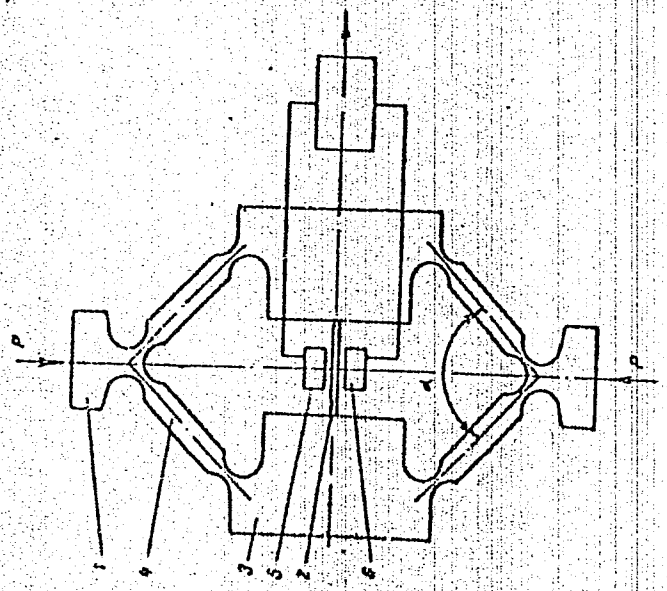
The applied force changes the tension along the link, thus changing its natural frequency which is the measure for the applied force.

1/2

4

1936 2158

AA 902758



15.8.66. as 1097575/25-28, BELAEV, N.F. et al.
Inst. of Testing Machines; Instruments and Mass
Measurement Means. (16.7.68) Bul. 14/11.4.68.
Class 42k, Int. Cl. G 01 l.

2/2 1936 2157 4

AA0046988 Belyayev M.M. UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

2/70

244507 MINIATURE VARIABLE CAPACITOR has stator plates which are covered on both sides by a solid dielectric film, except at the end where the connections are made. The films protrude over the metal plates where the rotor plates enter and are joined to form a leading edge. To eliminate electrostatic noise and reduce the absorption of moisture, a lubricant in the form of a molecular layer of polymethyl siloxane is applied to the surfaces of friction between the plates.

10.6.66 as 1081828/26-9. M.M.BELAYEV et al.(7.10.69. Bul 18/28.5.69. Class 21g. Int.Cl. H 01 g.

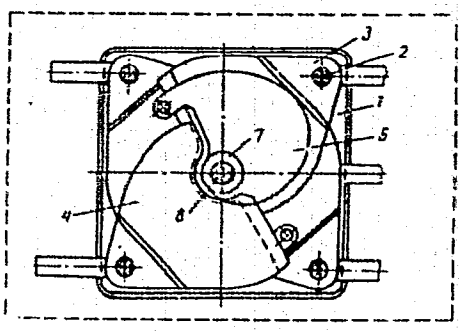
4

1/2

19790394

AA0046988

AUTHORS: Belyayev, M. M.; Vinogradova, T. F.; Goncharov, I. K.; Zamyatin, V. N.; Shcherbina, V. O.; Fridman, Ye. I.; El'kun, N. Ya.; Yerastova, V. I.



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19790395

8

USSR

UDC 620.171.2

SKLYAROV, N. M., KONONCHUK, N. I., ZHUKOV, S. L., ZHUKOV, N. D., VASIL'EV, B. N., AKIMOV, L. M., LAPITSKIY, Yu. A., BELYAYEV, M. S., KRIVONOGOV, G. S., ISHCHENKO, I. I., POGREBNYAK, A. D., and KUFAYEV, V. N. (Moscow, Kiev)

"Estimating the Heat Resistance of Heat-Resistant Alloys Under Actual Operating Conditions"

Kiev, Problemy prochnosti, No 1, 1971, pp 13-21

Abstract: Problems concerned with estimating the endurance of heat-resistant materials under unstable loading conditions are analyzed. A method is suggested for producing and using "secondary" endurance characteristics, increasing the accuracy of estimation and calculation of guaranteed durability under operating conditions and forced equivalent loading modes. These secondary characteristics represent the dependence of the durability of materials on combinations of preceding programed and subsequent stationary loads in various proportions. The formula of linear addition of damage applies. The secondary characteristics are produced by accelerated testing over limited test periods with extrapolation to the area of increased durability.

1/1

USSR

UDC: 620.17.171

KONONCHUK, N. I., AKIMOV, L. M., VASIL'YEV, B. N., LAPITSKIY, Yu. A., BELYAYEV, M. S., BICHUTSKAYA, O. V., KOPYLOV, A. A., TIKHOMIROVA, V. A., Moscow

"Study and Evaluation of the Kinetics of Fatigue Rupture of Heat-Resistant Alloys"

Kiev, Problemy Prochnosti, No 11, 1970, pp 19-23

Abstract: The results of an investigation of the fatigue resistance of heat-resistant alloys with symmetrical and asymmetrical loading cycles show significant and varied sensitivity to asymmetry in the loading cycle, depending on the type of alloy and test mode (temperature, number of loading cycles, etc.). This paper studies the kinetics of the development of fatigue cracks in heat-resistant alloy on the basis of the actual endurance characteristics with symmetrical and asymmetrical loading cycles. The process of specimen rupture was divided into two stages: the stationary stage before formation of the main crack and the nonstationary stage of development of the main crack to a certain depth, for example 10% of the

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KONOCHUK, N. I., AKIMOV, L. M., VASIL'YEV, B. N., LAPITSKIY, Yu. A., BELYAYEV, M. S., BICHUTSKAYA, O. V., KOPYLOV, A. A., TIKHOMIROVA, V. A., Moscow, Kiev, Problemy Prochnosti, No 11, 1970, pp 19-23

specimen thickness. A formula is produced for the "viability factor" which, in combination with calculation of the values of Δt_i and t_{tr}, can describe the kinetics of development of fatigue cracks in various alloys. This factor expresses the sensitivity of the alloy to the development of the fatigue crack on the basis of the experimental characteristics of endurance of real alloys.

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AFC044746 Belyayev, N.M. UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/70

241063 TEMPERATURE AND LUMINESCENCE METHOD OF LEAK DETECTION, for hollow components, can be applied as a test method for fluid-tightness by completely filling the component with a luminescent liquid, for example, a penetrant, sealing it up and exposing it to UV irradiation. Any leakage of the penetrant fluid, resulting in gathering of fluid on the outer surface, will be visually detected by luminescence. In order to provide excess internal pressure the component, after filling and sealing is placed in a heating chamber, for a given time at a given temperature, to cause volumetric expansion of the contained detector fluid.
20.3.67 as 1142371/25-28. I.L.LYAPKALO et alia.
DNIEPROPETROVSK UNIVERSITY. (15.8.69) Bul 13/1.4.69
Class 42k. Int.Cl.G 01n.

MT

21

1/1p

19771506

AA0044746

AUTHORS: Lyapkalo, I. L.; Bantsarevich, V. G.; Belyayev, N. M.; Nerovnya, I. V.; Slipchenko, V. S.; Kobylkin, V. V.

Dnepropetrovskiy Gosudarstvennyy Universitet

19771507

7/2

UDC 613.693

USSR

BELYAYEV, N. P., Honored Physician of the RSFSR, Col Med Serv; and PALAMARCHUK, A. I., Lt Col Med Serv

"Study of the Erroneous Behavior of Flight Crews"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 10, 1972, pp 70-72

Translation: A component part of medical service given to fliers is the detection and study of faulty actions of flight crews during flight and their preparation for flight accidents. It is known that this type of work takes two possible directions. One pertains to preventive measures (control over health conditions, work regimes, rest, diet, special equipment, and the like); the other, to the detection and study of faulty activity and reactions to events occurring in flight.

At the present time, the first direction has been adequately studied (A. N. Babiychuk, 1964, 1965; Ye. I. Ivan'kov, 1964; S. D. Baryshnikov, 1970 and others). This, however, cannot be said of the second. Practically all the faulty behavior tolerated in flying and the reasons for the fliers' actions must be studied in retrospect and from indirect indications since the moment at which they occur cannot be observed by the doctor. This factor substantially

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BELYAYEV, N. P., and PALAMARCHUK, A. I., Voyenno-Meditsinskiy Zhurnal, No 10, 1972, pp 70-72

complicates the matter and leads (together with other causes) to the fact that the problem of the preconditions that must be studied by the medical service has not as yet been solved. If the precondition ends in a flight accident, the medical service is obliged to participate in its study regardless of the cause (A. N. Babiychuk, 1964). In cases with fortunate endings, physicians are involved in an analysis of the faulty behavior and their preconditions only when the latter are connected with the "human factor." It seems to us, however, that in the "man-aircraft" system such a one-sided approach should not be permitted. In flights in aircraft at modern speeds, even "innocent" faults in technique or other complications are accompanied by definite neuro-psychic reactions with more or less explicit functional shifts in the various systems of the organism that may cause faulty actions on preconditions for flight accidents (P. V. Buyanov and F. P. Kosmolinskiy, 1967). The forms and expression of these reactions take various forms. Very often, they depend on the state of the organism at the moment of action of the extremal factor, on the individual psychological characteristics of the flier, and on the stage and nature of the flight (at the low-altitude limit, over the ocean, over the Arctic ice, etc.). Thus, the man and the aircraft become so closely interconnected that it is often impossible to determine

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BELYAYEV, N. P., and PALAMARCHUK, A. I., Voyenno-Meditsinskiy Zhurnal, No 10, 1972, pp 70-72

exactly which is responsible for the precondition to an accident. If the division is realized, however, it often turns out to be artificial. Hence, the doctor must take part in the study of all preconditions regardless of their causes.

Flier B., 41 years old, with a flying record of 18 years, trained in a master type of aircraft, healthy. Preflight regime observed. On one day of a long flight, he did not release the left support of the landing gear in descending to the runway. The landing was made on the right part of the undercarriage. On leaving the plane: pale; cold sweat on his face; his hands, lips, and cheeks trembling; speaking with difficulty. His pulse rate was 140 per minute, arterial pressure 170/100 mm Hg (ordinarily 110/70) unstable in the Romberg pose, a positive Rossolimo symptom easily detected. The night after the accident, despite restful and drowsy surroundings, slept little. Condition gradually returned to normal. On the second day, the pallor disappeared; beginning with the third day, he began to sleep; with the fourth, normal pulse; with the fifth, normal blood pressure; with the sixth, disappearance of tremors from the cheeks and fingers in the Romberg pose and no Rossolimo

symptom determinable. Not until the eighth day did his health return to normal. After a vacation and VLE (medical determination of flight fitness) he continued to make successful flights.

This precondition to the flying accident was connected with technique. Its appearance was in no way connected with health and the activity of the flier, but it nevertheless brought on a severe psychic trauma since it occurred at the most serious part of the flight, the landing. The consequence of the described precondition was the explicit stress reaction to an extremal condition (Ye. A. Derevyanko and V. G. Kuznetsov, 1970). Such reactions are often long-lasting. Without dynamic medical supervision and timely hygienic treatment, the course of the convalescence cannot be influenced and it is impossible to determine the onset of the safe period for continued flying work. Permission given to the flier for flight activity if residual phenomena of stress or psychic reactions are present represents a threat to flight safety.

As we know, the basic aim of detecting and studying erratic activity and the preconditions to flight accidents is to determine their causes so that

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BELYAYEV, N. P., and PALAMARCHUK, A. I., Voyenno-Meditsinskiy Zhurnal, No 10, 1972, pp 70-72

preventive measures may be undertaken in time. The causes of one group of erratic actions and preconditions can be detected with relative completeness and reliability directly after their appearance. The other group, because of the vagueness of its causes, is often classified as a miscalculation, negligence, or the like. This sometimes happens because the erratic actions and preconditions are considered outside the context of the previous work of the flier. Starting from that, we have recently begun, in such cases, to take into account the errors tolerated earlier by the flier in question. This has permitted a more precise determination of the essence in a series of erratic actions and changes in the earlier pattern of their causes.

Flier Ch., 35 years old, fully trained in a master aircraft, healthy. Quiet and even-tempered, disciplined. Loves flying. All flights carried out well, missions successfully completed. In the course of two years of flying, he has torn the tires on the wheels of his aircraft four times on landing. The cause, landing with braked wheels. His superiors considered these preconditions the result of carelessness and miscalculation on the part of the flier. Observing the experience of Ch. after each unsuccessful landing, the doctor doubted the

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BELYAYEV, N. P., and PALAMARCHUK, A. I., Voyenno-Meditsinskiy Zhurnal, No 10, 1972, pp 70-72

opinion of the flier's superiors and patiently searched for the cause over a long period of time. It was noticed, one day, when the flier was in training and performing a "landing under difficult conditions," that he incorrectly kept his feet on the pedals. The doctor analyzed his previous landings and found that the tires on the aircraft wheels were destroyed only when the landings were made under difficult conditions (a side wind) and required maximum attention on the part of the pilot. It then also became clear that each time the undercarriage was braked opposite to the direction of the wind (if the wind came from the right, the undercarriage was braked to the left, and vice versa). In subsequent training periods, the most likely mechanism of the erratic action leading to the preconditions was determined. It was essentially this: in landings under difficult conditions, when the whole attention of the pilot is concentrated on maintaining the flight parameters, there was no conscious control of the position of the leg. As a result, this leg, used to select the glide path angle before touchdown, moved ahead of the proper position, pressed the brake pedal, and thus braked the undercarriage. 6/7

USSR

BELYAYEV, N. P., and PALAMARCHUK, A. I., Voyenno-Meditsinskiy Zhurnal, No 10, 1972, pp 70-72

When the doctor has a more thorough knowledge of the elements of the pilot's landing techniques, a deep psychophysiological analysis of the facts obtained permits uncovering the most likely causes of the precondition. This example graphically shows the need for aviation physicians to learn the method of fliers in their training equipment. After study of this case, the flier and his superiors were briefed, and were shown the psychophysiological essence of the erractic actions and were given recommendations on their prevention. In more than a year since, Ch. has not repeated his errors although he has made several landings under similar conditions.

On the basis of the experience available to us, we have become convinced that the medical service should participate in studies of all erratic behavior and preconditions to flying accidents regardless of their causes. Every subsequent erratic action or precondition will then have to be studied in the context of previously tolerated actions, in addition to taking into account the state of physical and emotional health of the flier.

7/7

1/2 030 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--NATIONAL DRUG METISAZON IN TREATMENT OF POSTVACCINATION DERMATIC COMPLICATIONS -U-

AUTHOR-(02)-BELYAYEV, N.V., PREZHEVOZINSKAYA, L.I.

B

COUNTRY OF INFO--USSR

SOURCE--VESTNIK DERMATOLOGII I VENEROLOGII, 1970, NR 3, PP 72-74

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SKIN DISEASE, DRUG EFFECT, SMALLPOX, VACCINATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1985/1494 STEP NO--UR/0206/70/000/003/0072/0074

CIRC ACCESSION NO--AP0101578

UNCLASSIFIED

2/2 030 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0101578

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NEW NATIONAL DRUG, METISAZON, WAS USED IN 15 PATIENTS WITH DERMATIC COMPLICATIONS AFTER SMALLPOX VACCINATION. TEN PATIENTS SHOWED IMPROVEMENT IN 2 DAYS, 4 IN 3 AND ONE IN 5 DAYS. METISAZON STOPPED THE SPREAD OF THE PROCESS AND WAS CONDUCIVE TO DRYING OF EFFLORESCENCES WITHIN SHORTER TIME.

UNCLASSIFIED

APO015914

US 0000

PRIMARY SOURCE: FBIS Daily Report, Soviet Union, 12 Jan 1970, Vol III, Nr 7, p B1

USSR

COSMONAUT PAVEL IVANOVICH BELYAYEV DEAD AT 44

Moscow Domestic Service in Russian 1900 GMT 10 Jan 70 L)

[Text] The CPSU Central Committee, USSR Supreme Soviet Presidium, and the USSR Council of Ministers announced with profound grief that the renowned Pilot-Cosmonaut of the USSR Colonel Pavel Ivanovich Belyayev, member of the CPSU and Hero of the Soviet Union, died on 10 January 1970 after a serious illness. [Moscow TASS International English at 1915 GMT on 10 January adds the following: "In December, Pavel Belyayev suddenly developed acute gastric-intestinal hemorrhage on the basis of ulcer. After he was operated on, thrombosis of vessels of the mesentery developed which led to diffuse peritonitis. He died of overall intoxication, oedema of the lungs, and heart failure."]

Pavel Ivanovich Belyayev was born on 26 June 1925, in the village of Chelishcheva, Kosiyatinskiy Rayon, Vologda Oblast. In 1942, after finishing a 10-year school, he entered a plant where he worked first as a turner and then as an examiner of finished products.

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AP0015914

In the grim time of the Great Fatherland War, Pavel Ivanovich Belyayev, like many thousands of his compatriots, voluntarily entered the ranks of the Soviet Army. After graduating from flying school, he took part as a fighter pilot in the war against imperialist Japan. In the postwar years, Pavel Ivanovich Belyayev served in a guards fighter squadron of the Pacific Fleet air force. Here, in 1949, he joined the ranks of the CPSU. He was a pilot, senior pilot, wing commander, deputy squadron commander, and [words indistinct] of a unit.

In 1956, Pavel Ivanovich Belyayev began studies at the air force Red Banner Academy; after graduating, he commanded an air force squadron. Highly assessing the personal qualities of Pavel Ivanovich, his command sent him to join the cosmonauts' detachment in 1960. Here he displayed great perseverene in mastering space technology. He studied to perfection the material parts of the craft and mastered the practical skills of controlling it.

In March 1965, the Communist Party and the Soviet Government entrusted Pavel Ivanovich Belyayev with carrying out a space flight in the Voskhod-2 spaceship as crew commander. He successfully fulfilled this responsible task, displaying high moral qualities, willpower, courage, and the ability to work in complex conditions. During the flight he directed man's first exit into open space from a spacecraft. Colonel Belyayev landed the spaceship by using the manual control system. The flight of Voskhod-2 opened a new and exceptionally important page in the history of the conquest of space and increased the space glory of the Soviet Union.

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For successfully carrying out the space flight, Pavel Ivanovich Belyayev was awarded the title Hero of the Soviet Union, the Order of Lenin and the Gold Star Medal, and the title pilot-cosmonaut of the USSR. He was also awarded the Order of the Red Star and many medals and received awards from a number of foreign countries.

In recent years, Pavel Ivanovich persistently improved his special knowledge and directly participated in training cosmonauts for space flights.

19590895

USSR

UDC 620.193.5:546.623-31:546.45-31

BUDNIKOV, P. P., BELYAYEV, R. A., VOLODIN, P. L., RAKHALIN, N. A., FURAYEV, V. A., and TUMBAKOVA, M. I.

"The Corrosion of Aluminum and Beryllium Oxides in Gaseous Ammonia at 200-800°C"

Leningrad, Zhurnal Prikladnoy Khimii, Vol XLIV, No 1, Jan 71, pp 54-59

Abstract: Data on the corrosion resistance of fused samples of beryllium and aluminum oxides in gaseous ammonia are virtually absent in the literature.

This study deals with liquid synthetic ammonia, Grade 1, GOST 6221-52, 99.94% pure, and 99.5% pure beryllium oxide with a specific surface of 4.5 m^2/g. After processing, samples were placed in streams of ammonia gas at various temperatures and flow rates, for various periods (200-800°C; 7.5-12.8 m/sec; 3-10 hr). After each test the ammonia gas was checked for decomposition, which might occur at high temperatures.

Gravimetric, metallographic and electron-microscope studies of the surface, revealed no corrosion of either oxide in the 200-800°C range. An ammonia

USSR

BUDNIKOV, P. P., et al., Zhurnal Prikladnoy Khimii, Vol XLIV, No 1, Jan 71, pp 54-59

gas flow of 10 m/sec had neither a corrosive nor an erosive effect in the 250-350°C range.

2/2

Controls

USSR UDC: 621.373.43:621.397.62(088.8)

TIKHOMIROV, L. M., BELYAYEV, R. P., LOBAN, V. I., KUBAREV, N. S.

"A Device for Automatic Frequency and Phase Control"

USSR Author's Certificate No 265962, filed 8 Jun 66, published 1 Jul 70 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1D74 P)

Translation: This Author's Certificate introduces a device for automatic frequency and phase control based on a cold-cathode tube. The tube has a discharge preparation electrode connected through a resistor to a voltage source, and a controlling electrode connected through a capacitor to a source of synchronization pulses. The plate circuit is connected through a capacitor to a sawtooth voltage source and through an RC filter to the output. The discharge preparation electrode is connected through a resistor to the filter capacitor.

1/1

BELYAYEV, S. P.

aerosols

TECHNICAL TRANSLATION

FSTC-HT-23-107-71

ENGLISH TITLE: ELECTROSTATIC METHOD OF CALIBRATING PHOTOELECTRIC AEROSOL PARTICLE SIZE METERS

FOREIGN TITLE: ELEKTROSTATICHESKIY METHOD GRADUIROVKI FOTOELEKTRICHESKYKH IZMERITELEI RAZMEROV AEROZOL'NYKH

AUTHOR: S. P. BELYAEV, A. G. LAKTIONOV

SOURCE: NOT GIVEN

Translated for FSTC by ACSI

NOTICE

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1/2 008 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--MORPHOLOGY AND GROWTH OF CAULOBACTER -U-

AUTHOR--KRASILNIKOV, N.A., BELYAYEV, S.S.

B

COUNTRY OF INFO--USSR

SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 2, PP 352-357

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MORPHOLOGY, BACTERIA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/0368 STEP NO--UR/0220/70/039/002/0352/0357

CIRC ACCESSION NO--AP0100854

UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0100854

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ACCORDING TO THEIR MORPHOLOGY 127 CAULOBACTER STRAINS WERE DIVIDED INTO TWO TYPES: VIBROID AND BACTERIOD. BOTH TYPES INCLUDED SEVERAL SUBGROUPS WHICH BY THIER MAIN PROPERTIES BELONGED TO ONE MORPHOLOGICAL TYPE. THESE TWO MORPHOLOGICAL TYPES SHOULD BE REGARDED AS TWO SUBGENERA OF THE GENUS CAULOBACTER HENRICI AND JOHNSON. CAULOBACTER DIVIDED BY TRANSVERSE FISSION, THIS RESULTING IN A MOTILE UNIFLAGELLATED CELL AND IN A CELL WITH A STALK. SOMETIMES TWO CELLS WITH A STALK WERE FORMED AS A RESULT OF DIVISION IN BOTH MORPHOLOGICAL TYPES. THE STALK WAS PRODUCED ON A FLAGELLAR POLE OF THE BACTERIAL CELL AND WAS A PART OF ITS BODY, ITS APPENDAGE. THE FLAGELLUM DEGENERATED AND ONLY SOMETIMES COULD BE DISCERNIBLE AT THE DISTAL END OF THE STALKS.

UNCLASSIFIED

USSR

BELYAYEV, S. T.; ZELEVINSKIY, V. G. (Institute of Nuclear Physics, USSR Academy of Sciences)

"Nuclear Rotational Excitations in the Method of the Generalized Density Matrix"

Moscow, Yadernaya Fizika; March, 1973; pp 525-39

ABSTRACT: A method, proposed earlier by the authors, in which a single-particle density matrix is considered as an operator in the space of collective excited states was applied to the study of nuclear rotation. A microscopic transformation similar to a transition to a system of natural axes of the generalized model was found. The operator structure of the equations was studied and a regular scheme for their solution worked out. An approximation -- which in the lower order gives the results of a model of forced rotation and in subsequent orders, nonadiabatic rotation effects -- was considered in detail.

The article includes 95 equations and a table showing the relations between the operators and matrix elements. There are 13 bibliographic references.

1/1

BELYAYEV, S. YE.

UDC 539.[illegible]

INFLUENCE OF CRACKS ON THE STRENGTH OF HIGH-STRENGTH SHEET STRUCTURAL MATERIALS

[Article by S. Ye. Belyayev; Novosibirsk, [illegible] i Stal'nykh Konstruktsiy, Russian, signed to press [illegible] 1970, pp 205-215]

The use of high-strength sheet materials in aviation technology and for ships as well, operating under high pressure, and for other purposes requires study of their sensitivity to stress concentration (notches, openings, cracks, etcetera). This question has occupied the attention of the foreign literature for the past few years. Thus, for example, in the USA a number of organizations are studying the properties and sensitivity to notching and cracking of high-strength steels, used for rocket engines [1]. Tensile tests of flat test bars with a two-sided sharp notch (r_n = 0,02 mm) showed that type Kh200, 4130, Vaskojet 1000 steels, and others, treated to a high tensile strength (σ_u = 195-210 kgauss/mm²) possess an elevated sensitivity to notching. References [2, 3] also mention that with increase in strength of the steel the effect from internal defects becomes more effective. Therefore for analysis of such materials we recommend using notched test bars for tension with high coefficient of stress concentration (α_K = 17). On these test bars we can discover the brittleness of a material, subjected to heat treatment.

In practice we observe cases of brittle fracture of various parts. A small crack or surface defect (lines, pores, poor penetration in the welded seam, etcetera) are reasons for fracture of parts with reduced strength. However, the sensitivity to notching in high-strength sheet steels VL1?, ???, 30KhGSA, and others with σ_u = 160-180 kgauss/mm² under axial tension of the notched sample (r_n = 0.1 mm) at room temperature is manifested insignificantly. At low temperatures (-196° C) under conditions of biaxial or triaxial tension, when the plasticity is insufficient for the redistribution of

AN 0025163

UR9020

AUTHORS-- BELYAYEV, V., AND DMITRIYEV, D., CORRESPONDENTS

TITLE-- A COMPLETE READINESS

NEWSPAPER-- SOVETSKAYA LITVA, MARCH 10, 1970, P 1, COLS 3-6

ABSTRACT-- THE AUTHORS RELATE THEIR IMPRESSIONS AS THEY WITNESS THE OPERATIONS AT SOME DIVISION HEADQUARTERS DURING THE "DVINA" MANEUVERS.

ACCORDING TO ONE OF THE GENERALS, A PRESENT-DAY SOVIET MECHANIZED DIVISION HAS 16 TIMES AS MANY TANKS, 37 TIMES AS MANY PERSONNEL CARRIERS AND 13 TIMES AS MANY AUTOMATIC WEAPONS AS ITS COUNTERPART OF THE SECOND WORLD WAR. ONE SALVO FIRED BY THE DIVISION ARTILLERY AND MORTARS WOULD WEIGH 53,000 KG. THE NUMBER OF DIVISION VEHICLES, ASSESSED AS HORSE POWER PER SOLDIER, IS 30 H.P. PER SOLDIER.

19651969

USSR

UDC 621.3-528.3.025.135

ANISIMOV, B. V., Doctor of Technical Sciences, SOLOMATIN, N. M., Candidate of Technical Sciences, BELYAYEV, V. A., and SILANT'YEV, YU. N., Engineers

"Design of Digital, Computer-Based, Factographic Data Retrieval System"

Moscow, Mekhanizatsiya i Avtomatizatsiya Proizvodstva, No 12, 1972, pp 48-49

Abstract: The article describes a factographic data retrieval system created at the Chair of Mathematical Machines, Moscow Higher Technical School imeni N. E. Bauman, for automatically finding short abstracts of scientific and technical articles placed in the storage of a computer. The abstracts issued at the request of instructors and students can be read without subsequent processing. The unique feature of the system is the complete formalization of the reduction of the primary entries before they input into the computer. This reduces to a minimum the subjective factors which are characteristic of unformalized reduction techniques and which are the principal sources of the errors that occur in machine retrieval.

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Acc. Nr: AP0050000 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: UR 9074

B

97230x **Determining the relative level of methemoglobin in the blood on a recording spectrophotometer.** Makarov, P. O.; Belyaev, V. A.; Petushkov, N. M. *Vestn. Leningrad. Univ., Biol.* 1969, (4), 164-6 (Russ). Blood is hemolyzed and the stromata are removed by centrifugation. The absorbance (E_3) of the supernatant fluid vs. water is detd. spectrophotometrically at 630 nm. The absorbance (E_2) of a soln. of pure methemoglobin (I) is obtained for comparison. The I content of the sample is calcd. as: percent I = 100 × (E_3/E_2). Results were comparable when parallel detns. were made by means of the cyanomethemoglobin method.

Ellen L. Creskoff

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1/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--SELF ASSOCIATION OF TERT BUTYL AND TERT AMYL HYDROPEROXIDES STUDIED BY NMR AND IR SPECTROSCOPIC METHODS -U-

AUTHOR-(04)-YABLONSKIY, O.P., BYSTROV, V.F., VINOGRADOV, A.N., BELYAYEV, V.A.

COUNTRY OF INFO--USSR

B

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CIRC ACCESSION NO--AP0128899

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN SELF ASSOCN. OF TERT BUOOH AND TERT C SUB5 H SUB11 OOH IN CCL SUB4 TWO PROCESSES WERE FOUND: CYCLODIMERIZATION, FOLLOWED BY LINEAR ASSOCN. EQUIL. CONSTS. FOR THESE PROCESSES WERE DETD. AND DISCUSSED. FACILITY: NAUCH.-ISSLED. INST. MONOMER. SIN. KAUCH., YAROSLAVL, USSR.

UNCLASSIFIED

USSR

UDC: 621.314.652

[redacted]., LOGINOVA, T. A., TSINMAN, I. M.

"A Device for Igniting Gas-Discharge Tubes With Liquid Cathode"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 7, Mar 72, Author's Certificate No 329594, Division G, filed 24 Aug 70, published 9 Feb 72, p 208

Translation: This Author's Certificate introduces a device for igniting gas-discharge tubes with liquid cathode. The device contains two coaxially arranged igniting electrodes, one of which is made in the form of a rod. These electrodes are accommodated in a branch of the tube. The device also contains a pulse transformer. As a distinguishing feature of the patent, the reliability is increased, the design is simplified, and the ignition voltage is reduced by placing the primary winding of the pulse transformer on the branch of the tube, the secondary winding being the second ignition electrode which is made in the form of a helix with the end on the side furthest from the cathode being electrically connected to the rod electrode, while the other end of the helix forms with the rod electrode a discharge gap close to the cathode.

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USSR

UDC 911.3:616.988.25(47+57)

FILIPPOVA, N. A., USHAKOVA, G. V., and BELYAEV, V. G.

"Results in the Revision of Group I. persulcaltus Species in Native Foci of Tickborne Encephalitis"

V sb. Vtoroye Acarologicheskoye soveshchaniye. Ch. 2. Tezisy dokl. (Second Acarological Conference. Part 2. Theses of Reports -- collection of works) Kiev, "Nauk. dumka," 1970, pp 188-190 (from RZh-Meditsinskaya Geografiya, No 4, Apr 71, Abstract No 4.36.58)

[No abstract]

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USSR

BELYAYEV, V. F., YURIN, O. P.

"Algorithm for Translation of Descriptions of Digital Devices Corresponding to Various Levels of Planning"

Kibernetich. Sistemy Avtomatiz. Proyektir. [Cybernetic Systems for Automation of Planning -- Collection of Works], Moscow, 1973, pp 127-131 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V603, by A. Muchnik).

Translation: A problem of modeling of digital devices by computer with subdivision of the model into submodels so that the description of each submodel is placed in main memory is studied. With this approach, the modeling time can be reduced. The principles of subdivision of models into hierarchical levels are discussed. Modeling is illustrated with an example.

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USSR UDC: 576.895.421

FILIPPOVA, N. A., and BELYAYEV, V. G., Zoological Institute, Academy of Sciences USSR, Leningrad, and Primorskaya Antiplague Station

"Species of Ixodes persulcatus (Parasitiformes Ixodidae) Group. Ixodes pavlovskyi Pom. and Ixodes nipponensis Kitaoka et Saito in Primor'ye"

Leningrad, Parazitologiya, Vol 4, No 6, Nov/Dec 70, pp 515-523

Abstract: A study was made of the habitats of populations of Ixodes pavlovskyi Pom., Ixodes nipponensis Kitaoka et Saito, and Ixodes persulcatus Schulze ticks, their distribution, and certain ecological and morphological characteristics, particularly in the preimago phase. The Ixodes pavlovskyi ticks are widely distributed throughout a wide area. Its western part includes the Altay and adjacent nothern and southern elevations and mountains, and its eastern part, the elevations and mountain crests of the Far East bordering the valleys of the Amur and Ussuri Rivers and their tributaries. The ticks are confined for the most part to coniferous-broadleaved and secondary leafy forests, and feed on rodents and some species of birds. As compared with Ixodes persulcatus, their number is relatively small.

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FILIPPOVA, N. A., and BELYAYEV, V. G., Parazitologiya, Vol 4, No 6, Nov/Dec 70, pp 515-523

Ixodes nipponensis ticks are found in the southern and southwestern parts of Primorskiy Kray and along the coastal zone of Petr Velikiy Bay and its vicinity, mostly in grassy meadows, and marshes. They are also widely distributed in Japan. In its preimago phase, the tick is found on the field mouse Apodemus agrarius and the Far Eastern vole Microtis fortis. There are indications that it also parasitizes cattle, goats, horses, and dogs; it is also found on man. Ixodes persulcatus ticks are likewise found in these areas. Their number, however, is small as compared with that of Ixodes nipponensis. The male and female characteristics of Ixodes nipponensis ticks and their morphology, particularly in the preimago phase, are discussed in detail.

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